

09/576648

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each additional user, such as user 128 who is assigned codes 2 and 4.

The various CDMA codes for co-located users  
5 can be synchronous or asynchronous. A synchronous  
orthogonal code gives an advantage of about 15 dB or  
better over asynchronous CDMA codes. For multiple  
platforms, it is hard to synchronize CDMA codes among  
users. Thus, for the disclosed multi-platform  
10 system, asynchronous CDMA communication is assumed.  
Although multiple transponder nodes increase the  
system availability and total power resource, it  
under-utilizes the system's full potential, because  
there are only a finite number of codes available due  
15 to the finite bandwidth available to a system. Thus,  
the total bandwidth limits the number of users the  
system can serve and the system is unable to fully  
utilize the power and capacity it was designed to  
handle.

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In the preferred embodiment, the system 100  
is an asynchronous CDMA system that utilizes imbedded  
time delays as described in co-pending patent  
application Serial No. 09/530505, filed  
25 Apr. 18, 2000 and entitled "Coherent Synchronization  
of Code Division Multiple Access Signals," which is  
hereby incorporated by reference. In accordance with  
the preferred system, the signals 112, 114 from each  
transponder 102, 104 will arrive completely in-phase  
30 because appropriate time delays are pre-determined

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